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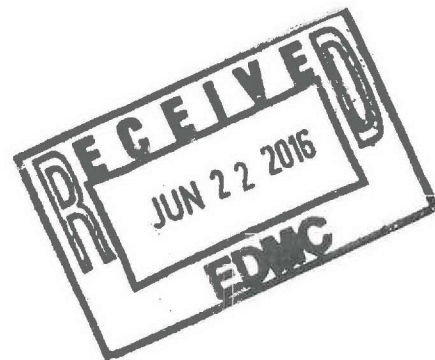
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## TRI-PARTY AGREEMENT

Change Notice Number TPA-CN- 0714	TPA CHANGE NOTICE FORM	Date: 04/19/2016
Document Number, Title, and Revision: DOE/RL-2011-106 Surveillance and Maintenance Plan for the 105-N/109-N Reactor Safe Storage Enclosure 0100390		Date Document Last Issued: November 2011
Originator: Boyd Hathaway, DOE-RL		Phone: 376-4264
<b>Description of Change:</b> <p>The referenced surveillance and maintenance (S&amp;M) plan identifies requirements for monitoring the internal temperature and flood sensors of the safe storage enclosures (SSE) Section 3.3.2, and performance of internal inspections of the SSE at 5-year intervals. The plan allows for change in the inspection interval based on completed inspections (Section 3.0).</p> <p>This change notice will eliminate the internal monitoring task and change the 5-year interval to a 10-year interval with the next inspection period for all SSEs in 2025. Redline changes are attached.</p>		
<p>Boyd Hathaway and Ecology agree that the proposed change</p> <p><b>DOE Lead Regulatory Agency</b></p> <p>modifies an approved workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, <i>Documentation and Records</i>, and not Chapter 12.0, <i>Changes to the Agreement</i>. The following change is authorized:</p> <p>In the referenced surveillance and maintenance plan, the requirements for remote internal temperature and flood sensor monitoring is eliminated (Section 3.3.2) and the Periodic inspection period is changed from 5 years to 10 years (Section 3.0). Redline changes are attached.</p> <p>Note: Include affected page number(s)</p>		
<b>Justification and Impacts of Change:</b> <b>Eliminate Monitoring:</b> <p>HNF-59342, <i>Surveillance Report for of 105-C, 105-D, 105-F, 105-H and 105-N/109-N Safe Storage Enclosures</i>, provides temperature and flood condition data for all SSEs, including 105-N/109-N. The data demonstrate that the interior temperature sensors accurately reflect the exterior ambient air temperature (i.e., cooler in the winter months and warmer in the summer months). Similarly, there is no indication that a flooding event has occurred: as evidenced by the fact that no flood sensors have been alarmed and no water accumulation was found on the floors during the recent interior inspections. A flooding event is not likely to occur due to the low annual rainfall and the depth to groundwater.</p> <p>The empirical data collected to date demonstrate that the interior conditions (temperature variation and no demonstrated flooding) of the SSEs are stable. Continued monitoring does not add value to the ongoing surveillance and maintenance operations.</p> <p>The sensor equipment will be de-energized and left in place, however, it will not be regularly serviced or monitored. The cellular service to each SSE will be discontinued.</p> <p>Annual exterior inspections will continue along with the periodic interior inspections to assess the structural and radiological conditions of the SSE.</p>		
<b>Revise Inspection schedule:</b> <p>In FY 2015, RL completed the 5-year inspection of 105-C, 105-D, 105-F, 105-H, and 105N/109N SSEs. Work on 105-DR was completed in 2013. The results of the FY 2015 inspections of 105-C, D, F, H, and N are provided in HNF-59342, <i>Surveillance Report for of 105-C, 105-D, 105-F, 105-H and 105-N/109-N Safe Storage Enclosures</i>. Based on the findings of these recent assessments, the SSE structures, including 105-N/109-N, are holding up well to the elements and minimal repairs have been needed to date. Where</p>		

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maintenance or housekeeping actions have been recommended, the actions have been or will be completed by RL.		
An exterior condition assessment of all SSEs, including 105-N/109-N, and exterior radiological conditions will continue to be completed annually. The combination of annual exterior inspections and 10-year interior assessment/repair cycle is adequate to maintain protectiveness of human health and the environment.		
Continued		
Approvals:		
<u>Boyd Hathaway</u>	<u>6/17/16</u>	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
DOE Project Manager Boyd Hathaway	Date	
		<input type="checkbox"/> Approved <input type="checkbox"/> Disapproved
<u>Stephanie Schleif</u>	<u>6/20/16</u>	<input checked="" type="checkbox"/> Approved <input type="checkbox"/> Disapproved
Ecology Project Manager (105-D, DR, H, N) Stephanie Schleif	Date	



0100390

DOE/RL-2011-106  
Rev. 0

# **Surveillance and Maintenance Plan for the 105-N/109-N Reactor Safe Storage Enclosure**



United States  
Department of Energy





### 3.0 SAFE STORAGE ENCLOSURE SURVEILLANCE AND MAINTENANCE PROGRAM

The primary activity for the 105-N/109-N SSE S&M Program is to perform periodic facility surveillances to ensure structural integrity of the facility and that any hazardous material within the confinement is maintained and secure.

The 105-N/109-N SSE is designed to be a minimal maintenance facility. A provision for periodic surveillances of the accessible internal areas of the SSE at ~~8~~ <sup>10-year</sup> year intervals has been included to verify facility status. The surveillance frequency may later be adjusted based on actual inspection history. Non-routine activities may include necessary repair work on installed monitoring equipment for the facility.

*Insert A* *> From Revision Page 2*  
The 105-N/109-N SSE is expected to remain in the S&M Program until final reactor disposition decisions are made.

#### 3.1 PLANNED SAFE STORAGE ENCLOSURE SURVEILLANCE ROUTES

The planned surveillance routes are shown in Figures 3-1 through 3-12.

Access to the exterior of either building roof is not part of the normal surveillance and inspection route. Access to the underside of the new roof (40-ft) over the 109-N Building is part of the normal surveillance and inspection route. There is no planned access to the interior (underside) of the new 105-N roof. A portion of the new 105-N roof may be observed from room 609 at the northwest corner of 105-N at the 60 ft-6 in. elevation. Access to this interior (underside) of the new 105-N roof would require, at a minimum, a specific Work Plan, fall protection, and temporary lighting.

In certain areas on the underside of the 109-N roof, brass tags have been hung from the steel-roof joists. The tags indicate where minor cracks were observed in the ends of some of the diagonal bracing on the joists. A selected portion of the cracks are to be inspected to determine if the cracks have propagated. A map showing the location of all the cracks along with their exact location on the joist and the length of each crack is included with this plan (Appendix A).

An external visual inspection of the 105-N/109-N roofs (e.g., roofing, siding, and flashing) and building structures will be conducted annually. External access to either roof is not required and should be avoided unless repair is necessary. Visual inspection of the roofs can be performed from grade because any potential degradation will be readily apparent (e.g., flashing coming loose).

at the (-)16 ft-0 in. level in the new 109-N Access Building and at various locations in the 109-N Building at the 40 ft-0 in. level under the new SSE roofing enclosure. See drawings H-1-89875 through H-1-89884 for the actual receptacle locations.

### 3.3.2 Instrumentation

*See Item B from revision page*

The 105-N/109-N SSE is configured with three sets of temperature sensors (resistance temperature detectors) and three sets of flooding sensors (float switch), which include installed spares for each sensor. Temperature sensors are located under the new roofing enclosure in 105-N Building room 172 at elevation 5 ft-0 in., in the 109-N Building at the 40 ft-0 in. elevation on the east side of the pressurizer, and two are located below the original 105-N Building roof at upper stair 6A landing. In addition, two level sensors are located at the (-)16 ft-0 in. level near the north wall in the new 109-N Access Building and below the (-)16 ft-0 in. level in 105-N Building near the bottom of Stair No. 6 and also near the top of the floor drain in 105-N Building room 24W at the (-)16 ft-0 in. level near the west wall. See drawings H-1-89875 through H-1-89884 for the actual locations of the temperature and level sensors.

The remote sensors are connected to a Blue Tree Wireless modem (Sixnet cellular modem) that handles analog and discrete inputs. Each signal is interrogated at the operation supervisor's workstation via an internet connection. Any personal computer loaded with the SSE reactor query software tool may act as a remote monitoring station. When an alarm condition is observed at the remote monitoring station, personnel will evaluate the alarm and, if required, will go to the 105-N/109-N SSE and take appropriate corrective actions.

Each pair of flooding sensors are normally closed contacts and wired in series to indicate an open circuit or flood condition at the monitoring station. If a flood sensor fails, the backup sensor may be wired to work independently without making an SSE reactor entry.

Redundant resistance temperature detectors (RTDs) are connected to temperature transmitters that send a converted 4-20ma signal to the wireless modem. In the event of an RTD sensor failure, a selector switch located in the SSE utility room (Room 172 in the 105-N Building) can be changed to utilize the redundant field sensor. Instrument replacements will normally be conducted during regularly scheduled surveillance periods.

### 3.3.3 Ventilation

The 105-N/109-N SSE is a deactivated facility that is uninhabited and locked, except during S&M activities. Most of the reactor's components were removed as part of the stabilization effort for placing the facility into ISS. Remaining equipment and components that contain radiological inventory were sealed during deactivation and implementation of the ISS project. Many accessible areas in the interior of the building have had a fixative applied to limit the spread of contamination.

To provide a habitable and essentially radon-free environment inside the SSE during nonroutine surveillance, portable skid-mounted exhausters may be used to draw air into and out of the SSE.



**TPA Change Notice (TPA-CN 0714)**

**Revised language to DOE/RL-2004-59, Surveillance and Maintenance Plan for the 105-N/109-N  
Reactor Safe Storage Enclosure**

**Insert A as new Paragraph - Section 3.0 Safe Storage Enclosure Surveillance and Maintenance Program  
(DOE/RL-2011-106 Page 3-1)**

The regulatory agencies, EPA and Department of Ecology, will be notified and invited to attend annual inspections and ten year surveillance inspections. To support the internal surveillances every 10 years, DOE will submit a report to Ecology and the administrative record documenting all issues and concerns, including the checklists for the past 10 year annual inspections.

**Item B - Section 3.3.2 Instrumentation (DOE/RL-2011-106 Page 3-16)**

In 2016, the digital telephone modem that allows remote computer access to the monitoring instrumentation will be disconnected in accordance with TPA Change Notice 0714. The interior equipment including sensors and wiring will remain in place, however, the equipment will not be maintained. If required in the future, the telephone modem connection may be reestablished.